

Toxic Substances Fact Sheet

COMMON NAME: Hydrogen Sulfide CAS Number: 7783-06-4

Hazard Summary

- Hydrogen Sulfide can affect you when it is breathed in and when it comes into contact with your skin or mucous membranes.
- Exposure of high levels of hydrogen sulfide can cause immediate death.
- Low level exposure can cause eye pain and redness, dizziness, nausea, and head aches.

USES:

Hydrogen sulfide is used in the synthesis of inorganic and organic sulfur compounds. It is also used as an analytical reagent and disinfectant. It is often present in natural gas ("sour gas") and can be a component of sewer gas.

PHYSICAL and CHEMICAL CHARACTERISTICS:

Hydrogen sulfide is a colorless, flammable gas with a strong odor of rotten eggs. It is heavier than air.

The gas is corrosive to metals.

The odor threshold is 0.13 parts per million (ppm) and easily noticeable by most individuals at 1.0 ppm. Olfactory fatigue quickly occurs at concentrations above 100 ppm.

Hydrogen sulfide is soluble in water.

FEDERAL STANDARDS

Drinking Water Maximum Contaminant Level:

There is no maximum contaminant level (MCL) for hydrogen sulfide but a limit of 0.2 ppm has been suggested based on health effects.

Workplace Exposure Limits

The Occupational Safety and Health Administration has established a permissible exposure limit for hydrogen sulfide of 20 ppm not to be exceeded during any 10 minute work period and 50 ppm not to be exceeded at any time.

HEALTH EFFECTS:

As with all chemicals, the type and severity of health effects associated with exposure to hydrogen sulfide depend on the level, duration, and route of exposure. Age, gender, weight, preexisting health condition, and overall susceptibility of the individual also determines the health effects one may experience. People show a wide range of variability in their tolerance for chemical exposure.

Short-term Health Effects:

Exposure to high levels of hydrogen sulfide can cause immediate death. Low level exposure can cause eye pain and redness with blurred vision as well as irritation of the upper respiratory tract and the lungs. Nausea, dizziness, and confusion are also possible effects.

Long-term Health Effects:

The following chronic (long-term) health effects can occur some time after exposure to hydrogen sulfide and can last for months or years.

CANCER HAZARD:

Exposure to hydrogen sulfide is not known to cause cancer but testing has been limited.

OTHER LONG-TERM EFFECTS:

Continuous exposure to hydrogen sulfide can cause blurred vision, headaches, trouble sleeping, bronchitis, coughing spells, and shortness of breath.

Reproductive Hazards:

Hydrogen sulfide has not been investigated for its effects on reproduction.

MEDICAL TESTING:

To document exposure to high levels of hydrogen sulfide, the following tests are available:

Lung function test. A chest x-ray may also be considered if exposure is high.

Measurement of hydrogen sulfide in the blood (normal is less than 0.05 ppm.)

This fact sheet summarizes information about this chemical, and is not a comprehensive listing of potential effects. For more information, please refer to applicable guidelines and scientific literature. Consult your physician for specific medical advice.

Prepared by the Environmental Epidemiology Division, Michigan Department of Community Health, 3423 N. Martin Luther King Jr. Blvd., P.O. Box 30195, Lansing, MI 48909. Based on information from the Handbook of Toxic and Hazardous Chemicals and Carcinogens by Marshall Sittig, a New Jersey Department of Health Hazardous Substance Fact Sheet and a fact sheet format used by the Wisconsin Department of Health and Social Services.